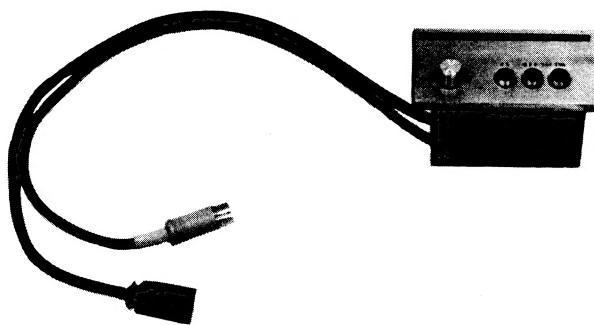




Set using ISO screws

TTS-4000

GEP Model



SONY®
SERVICE MANUAL

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SERVICING NOTES

Operational check should be performed by putting the platter in place. This causes difficulty of electrical check at operation. A pair of special

extension cord (1-534-731-11) is ready at the factory service department. By using the extension cord, operational check is performed as illustrated.

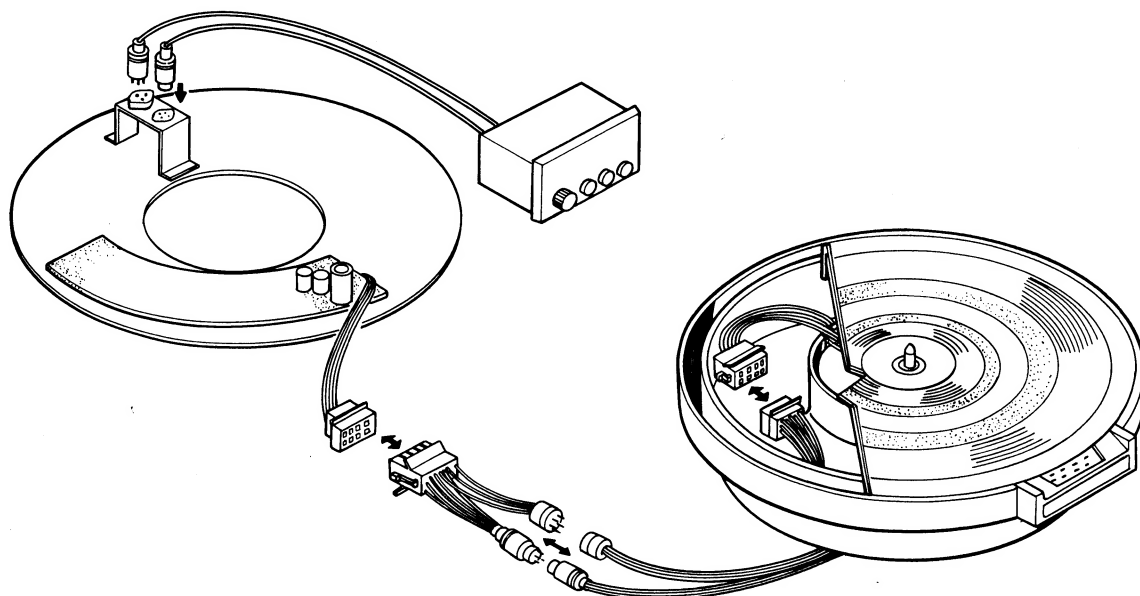


Fig. A How to repair unit

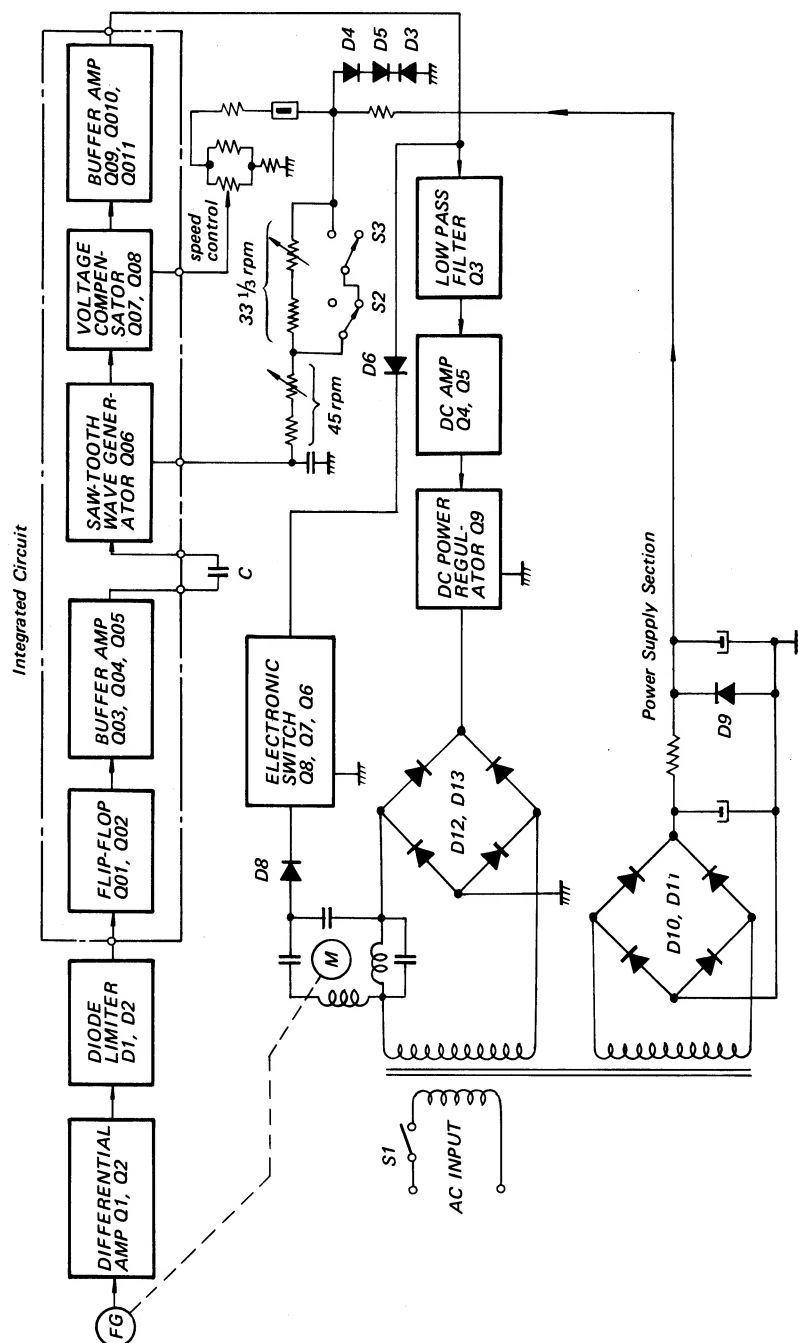
TECHNICAL SPECIFICATIONS

Speeds:	33 $\frac{1}{3}$, 45 rpm 3%, adjustable
Turntable drive:	Direct-drive system
Flutter and wow:	Less than 0.03%
Signal-to-noise ratio:	Greater than 60 dB
Motor:	AC servo-controlled motor
Power consumption:	Approx. 17 watts
Power requirements:	100, 117, 220 and 240 volts ac, 50/60 Hz
Dimensions:	Turntable Assembly: 343 mm (dia) x 145.6 mm (height)

Weight:	13 $\frac{1}{2}$ " (dia) x 5 $\frac{3}{4}$ " (height)
	Control Box: 116 mm (width) x 64.5 mm (height) x 66 mm (depth) 4-9/16" (width) x 2-35/64" (height) x 2-19/32" (depth)
	Turntable Assembly: Approx. 9.8 kg (21 lb 10 oz)
	Control Box: Approx. 0.3 kg (9.6 oz)

SECTION 1

TECHNICAL DESCRIPTION



SECTION 2

DISASSEMBLY PROCEDURES

2-1. Turntable Removal

1. Remove the rubber mat from the turntable.
2. Insert your fingers into the two turntable holes with both thumbs placed on the center spindle.
3. Remove the turntable by pulling it straight up.

2-2. Turntable Base Removal

1. Remove the turntable as described in Procedure 2-1.
2. Disconnect the two control box cables at the bottom.
3. Remove the four screws (marked with ▲ in Fig. 2-1) securing the turntable base to the wooden case. This frees the turntable base.

2-3. Chassis Removal

1. Remove the turntable as described in Procedure 2-1.
2. Remove the ten screws (marked with ■ in Fig. 2-1.) securing the chassis to the turntable base. This frees the chassis.

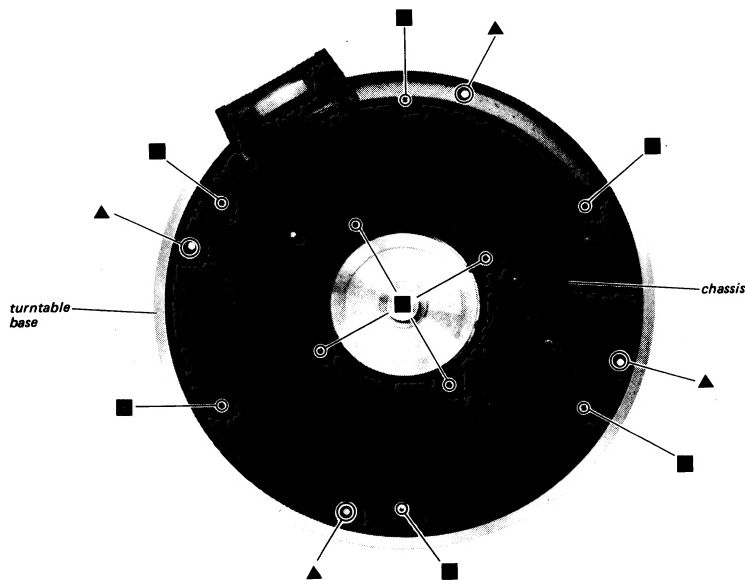


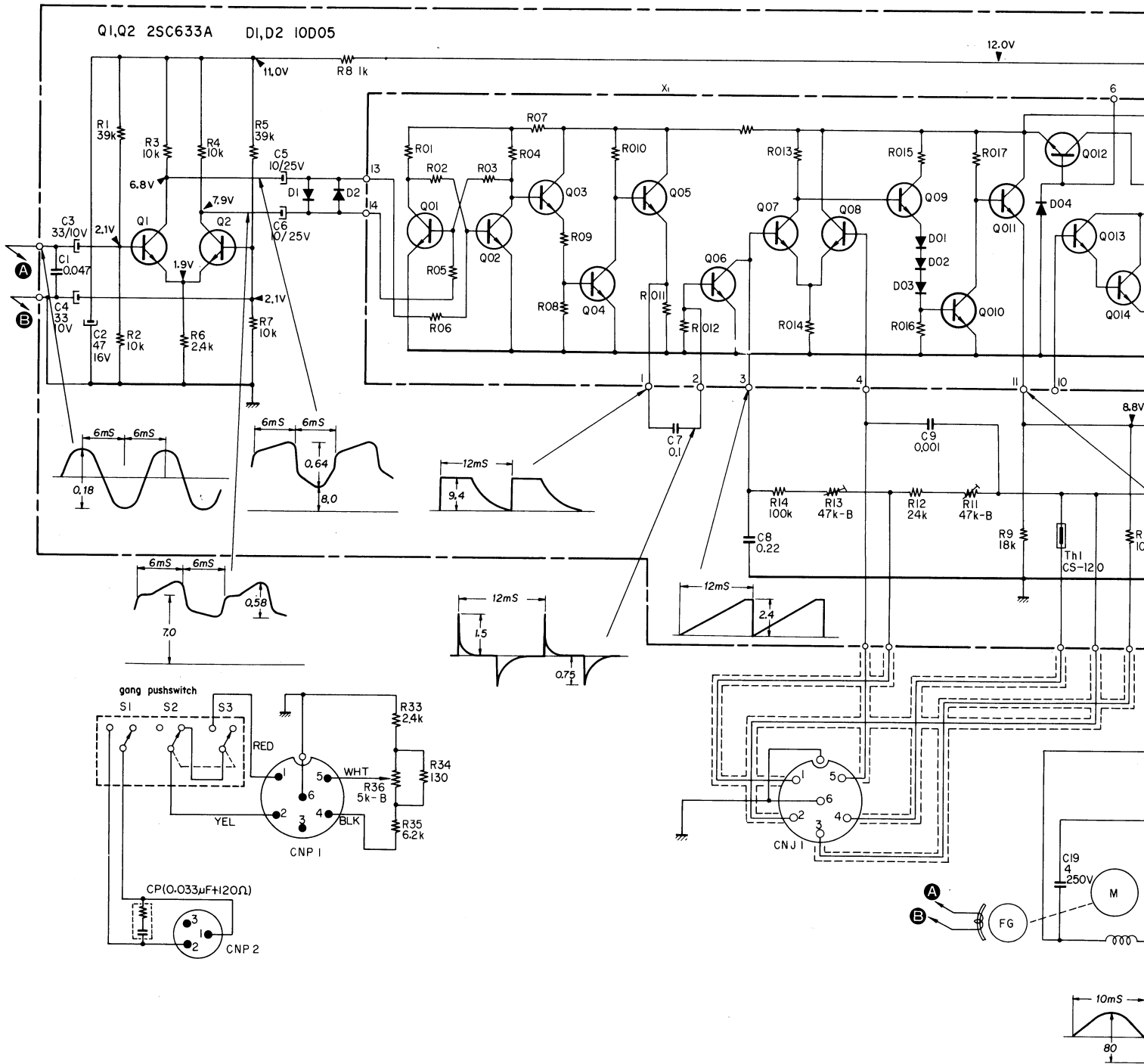
Fig. 2-1. Turntable base and chassis removal

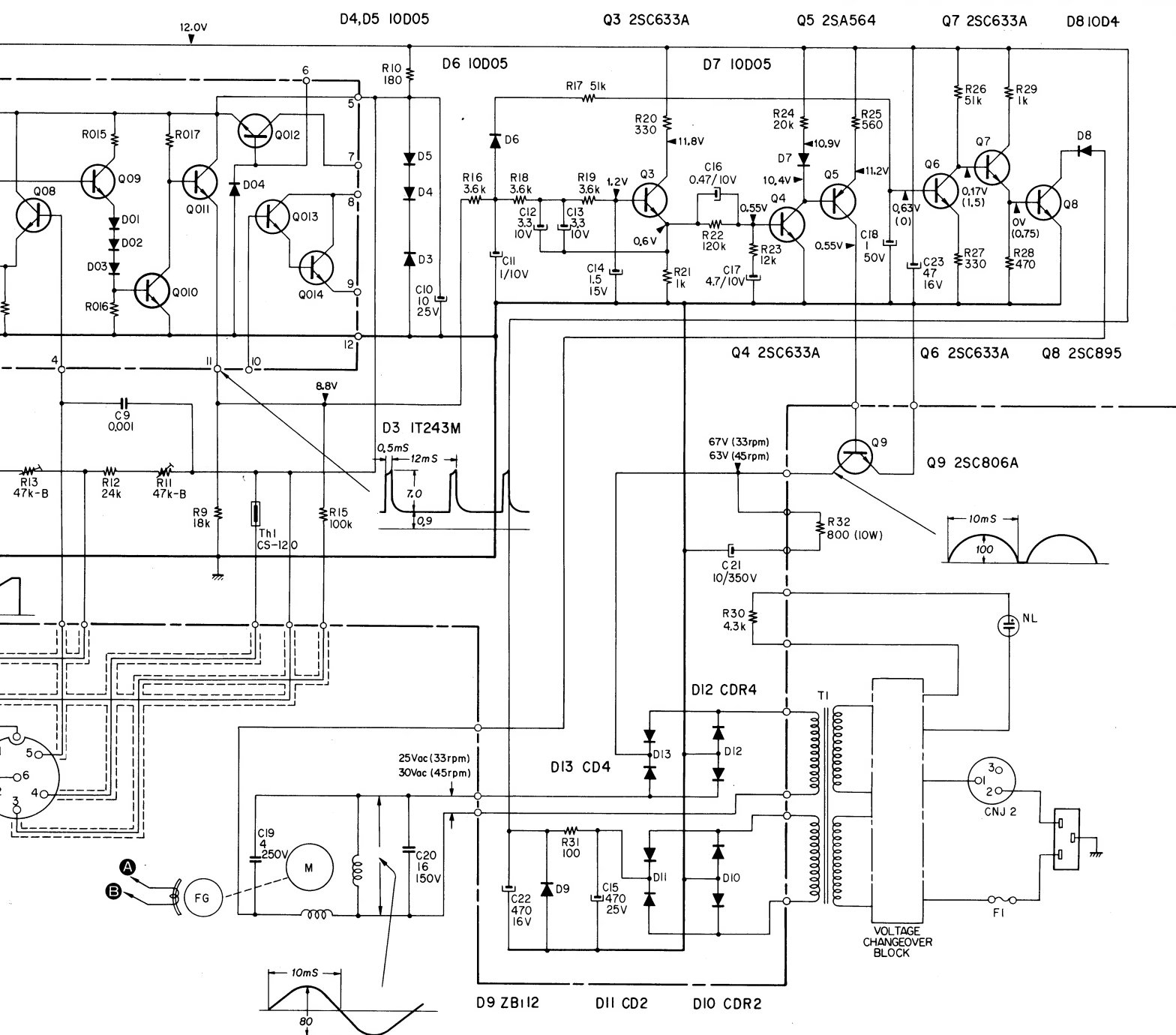
MEMO

Handwriting practice lines consisting of 20 horizontal dashed lines.

SECTION 3 DIAGRAMS

3-1 SCHEMATIC DIAGRAM





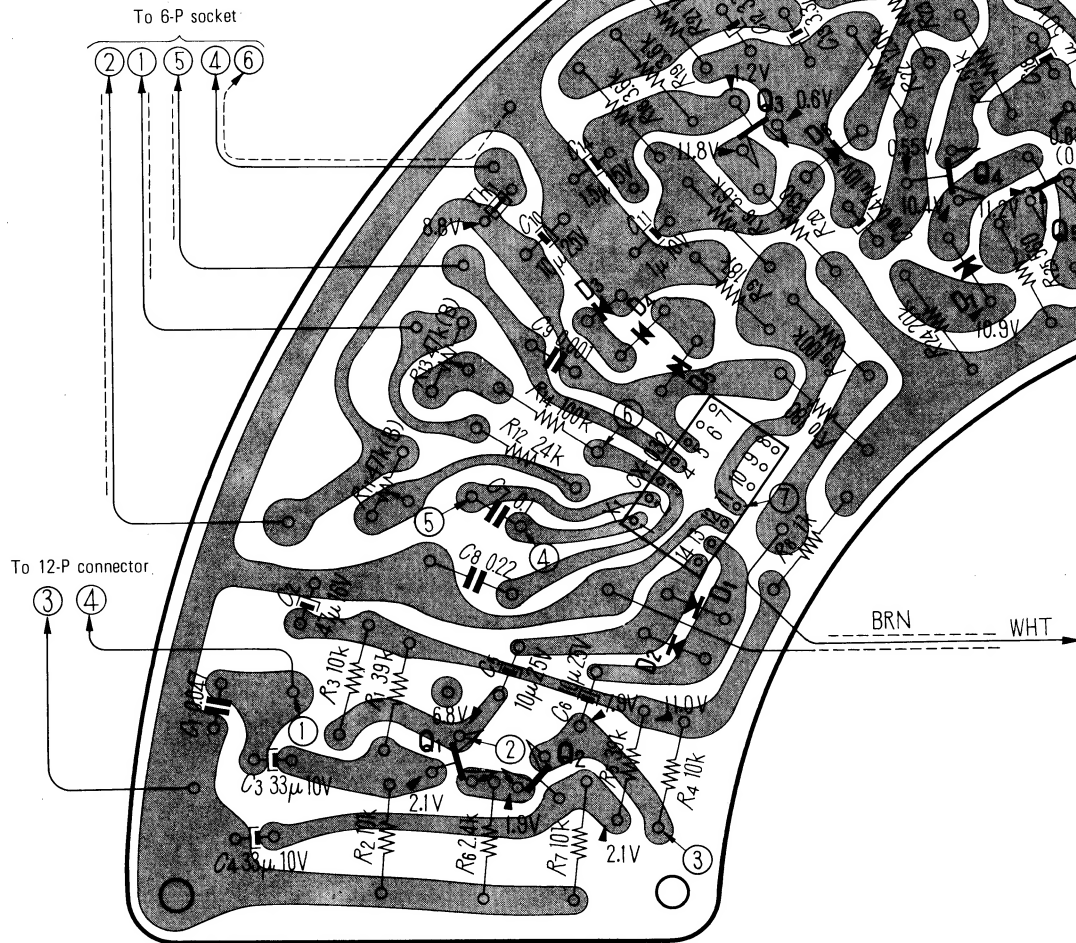
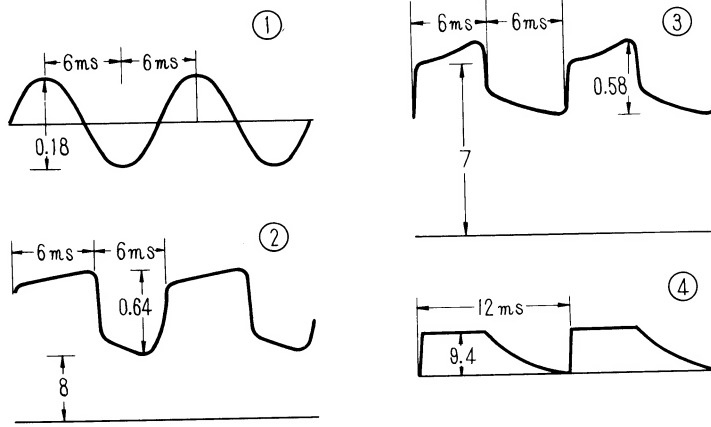
Note:

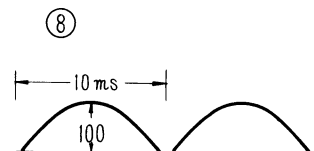
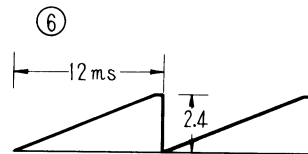
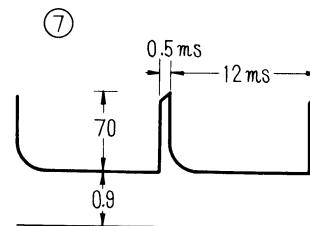
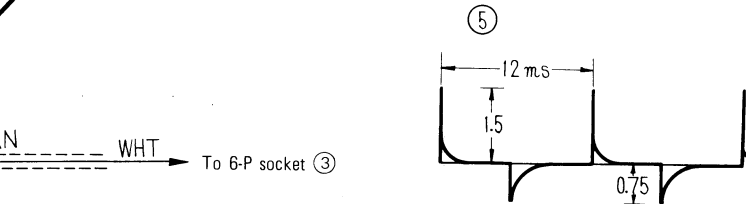
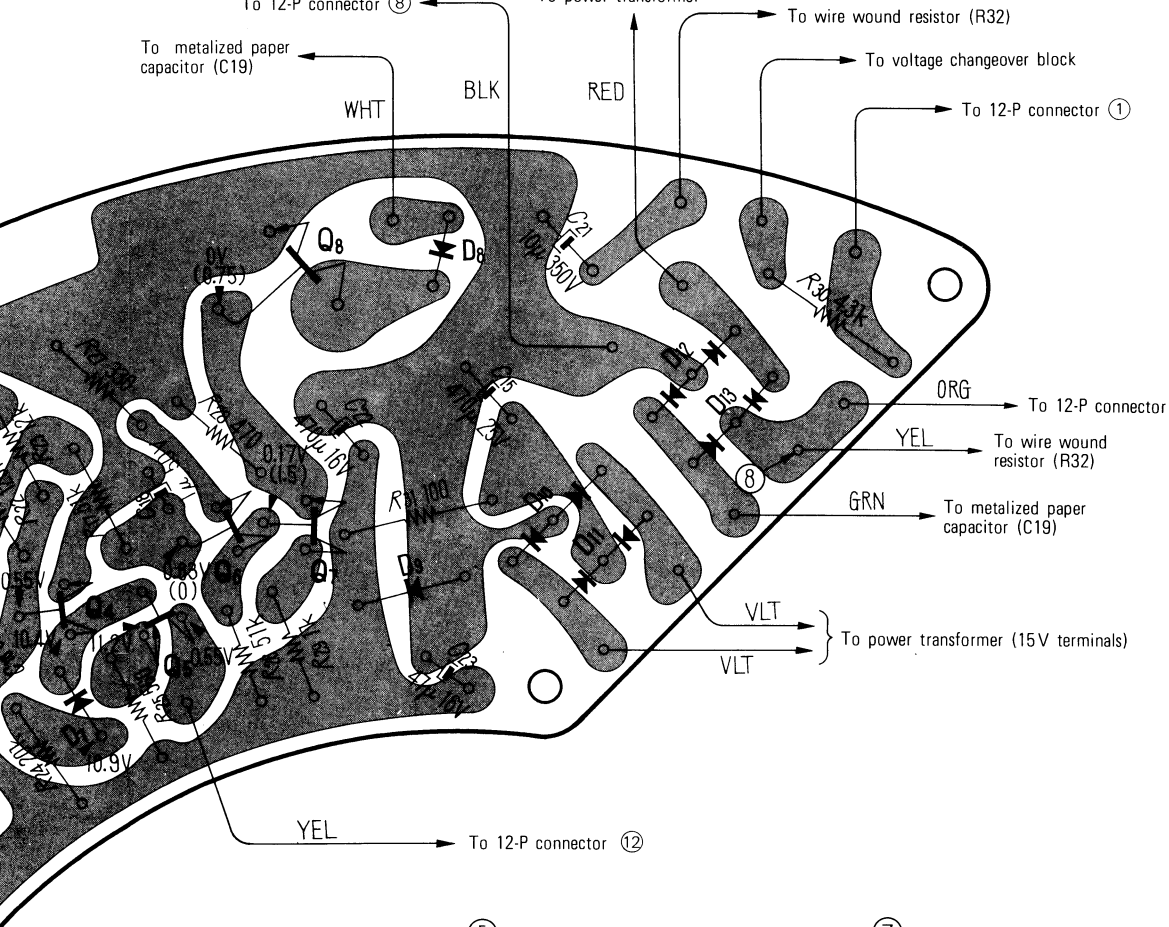
All resistance values are in ohms. K=1,000, M=1,000k
 All capacitance values are in μ F except as indicated with p, which means μ F.

All voltages represent an average value and should hold within $\pm 10\%$.

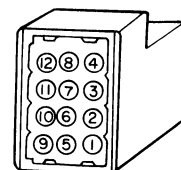
All voltages are dc measured at 33-1/3 rpm operation with a VOM which has an input impedance of 20k ohms/volt. No signalin.

Voltages in () are measured with electromagnetic brake operated.





12-P Socket



bottom view

SECTION 4

REPACKING

The TTS-4000's original shipping carton and packing materials are the ideal containers for shipping the unit. However to secure the maximum protection, the TTS-4000

must be repacked in these materials precisely as before. The proper repacking procedures are shown in Fig. 4-1.

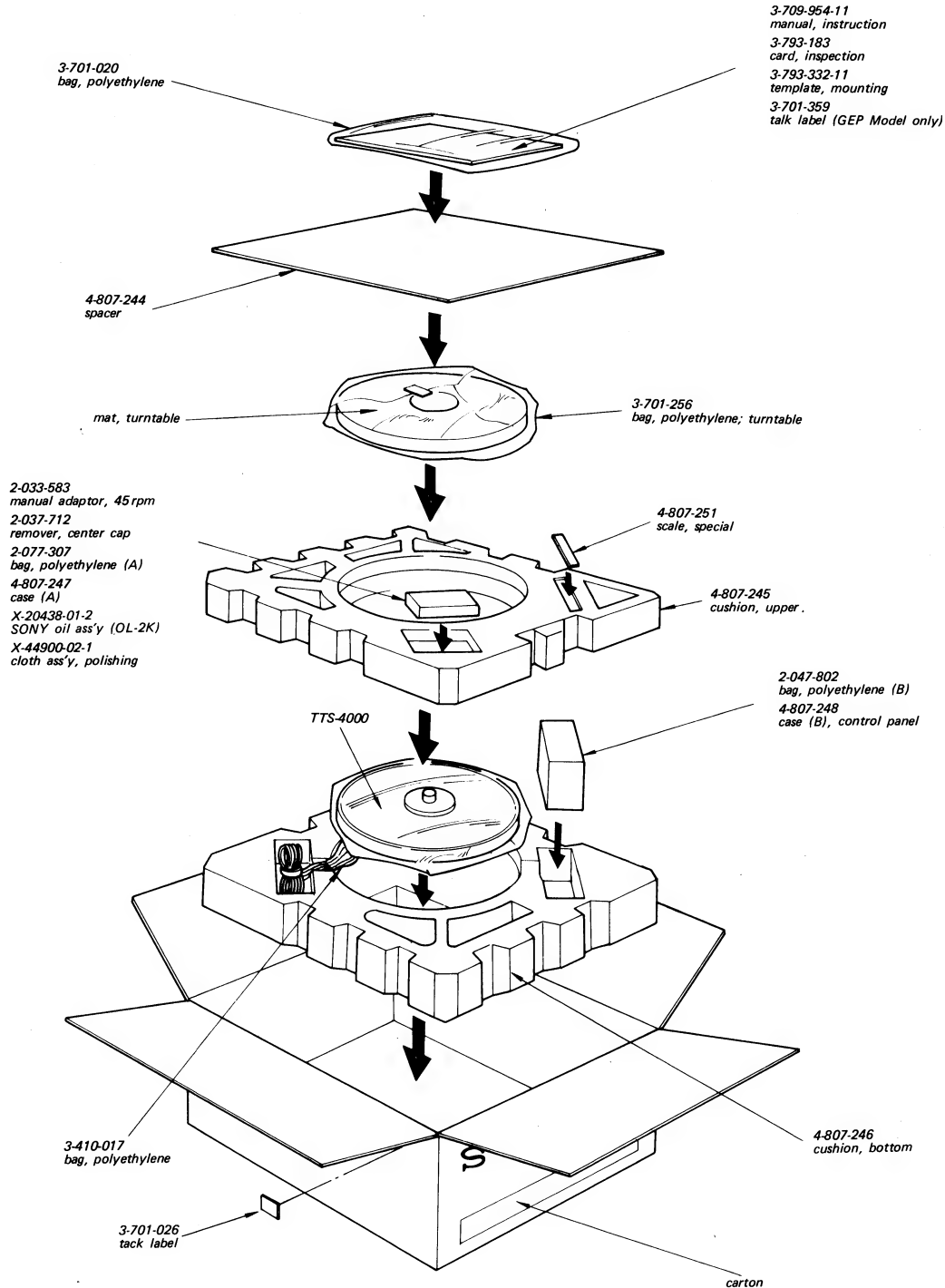





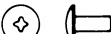
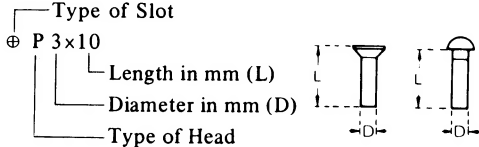


Fig. 4-1. Repacking

SECTION 5
EXPLODED VIEW

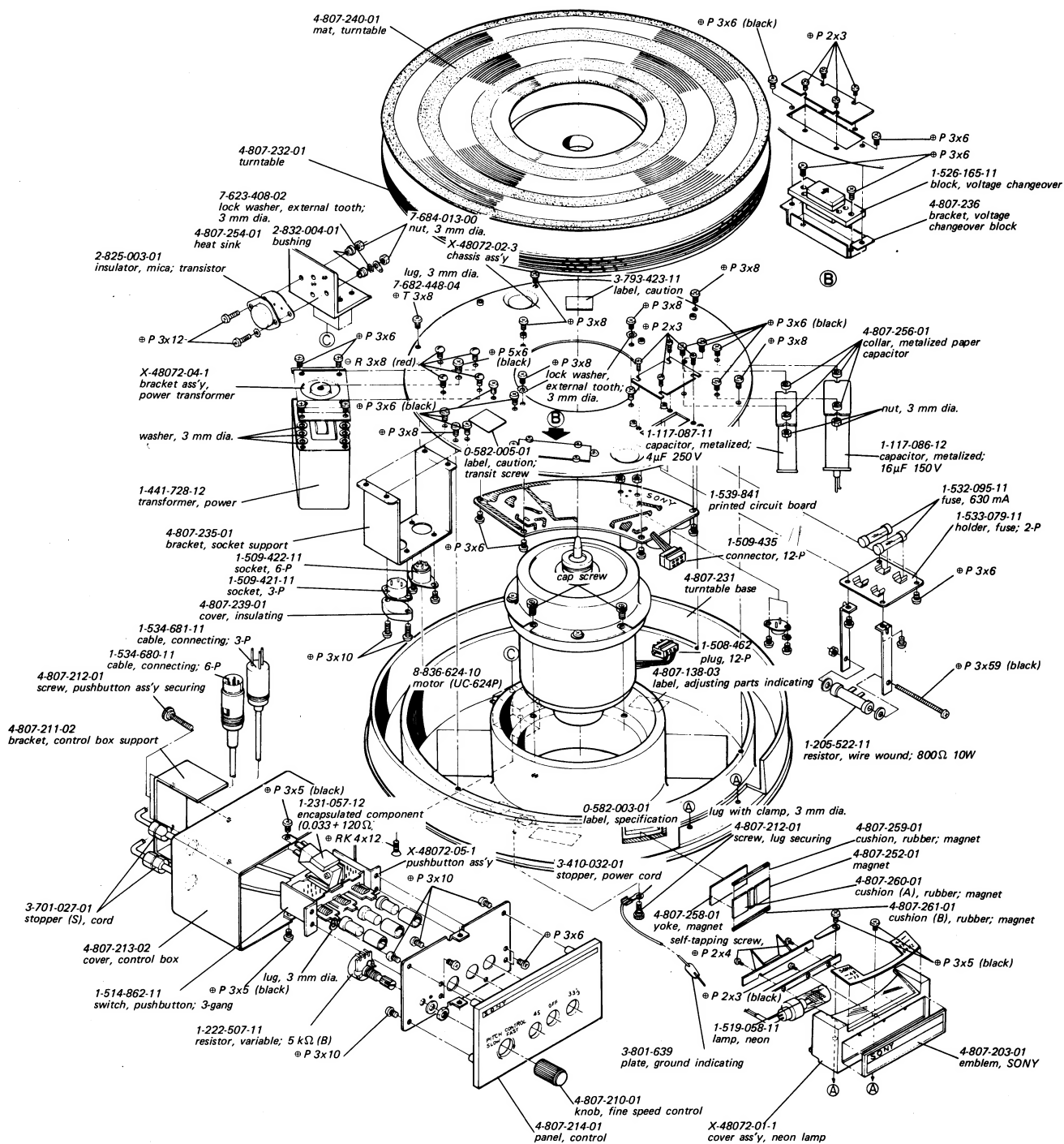
(1) The following chart will help you to decipher the hardware codes given in the exploded view.

— Hardware Nomenclature —

P – Pan Head Screw		SC – Set Screw	
K – Flat Countersunk Head Screw ...		E – Retaining Ring (E Washer)	
RK – Oval Countersunk Head Screw ...		W – Washer	
T – Truss Head Screw		SW – Spring Washer	
		LW – Lock Washer	
		N – Nut	
– Example –			
			

(2) To simplify the exploded view, the part numbers of normal screws, nuts, washers, and retaining rings are not expressed but summarized in the table below.

<u>Part No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Description</u>
7-681-363-04	screw, ⊕ RK4 × 12	7-623-108-15	washer, flat; 3 mm dia.
7-682-123-05	screw, ⊕ P2 × 3	7-623-112-04	washer, flat; 5 mm dia.
7-682-146-01	screw, ⊕ P3 × 5	7-623-208-12	washer, spring; 3 mm dia.
7-682-147-05	screw, ⊕ P3 × 6	7-623-408-02	washer, lock (ext. tooth); 3 mm dia.
7-682-149-03	screw, ⊕ P3 × 10		
7-682-151-01	screw, ⊕ P3 × 14	7-623-508-01	lug, 3 mm dia.
7-682-173-05	screw, ⊕ P5 × 6	7-623-058-31	lug, dual; 3 mm dia.
7-682-281-02	screw, ⊕ K5 × 30		
7-682-448-04	screw, ⊕ T3 × 8	7-684-013-00	nut, 3 mm dia.
7-685-102-25	screw, self-tapping; ⊕ P2 × 4	7-684-015-02	nut, 5 mm dia.
7-621-761-64	screw, wood; ⊕ K5.1 × 25	7-683-420-01	bolt, hexagon head; 4 mm dia. × 10 mm



SECTION 6

ELECTRICAL PARTS LIST

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
SEMICONDUCTORS			C11	1-127-023	1 $\pm 20\%$ 10V solid, aluminum
D1		diode 10D-05	C12	1-127-025	3.3 $\pm 20\%$ 10V solid, aluminum
D2		diode 10D-05	C13	1-127-025	3.3 $\pm 20\%$ 10V solid, aluminum
D3		diode 1T-243M	C14	1-131-157	1.5 $\pm \frac{100}{10}\%$ 15V tantalum
D4		diode 10D-05	C15	1-121-733	470 $\pm \frac{100}{10}\%$ 25V electrolytic
D5		diode 10D-05	C16	1-127-022	0.47 $\pm 20\%$ 10V solid, aluminum
D6		diode 10D-05	C17	1-131-140	4.7 $\pm \frac{40}{20}\%$ 50V tantalum
D7		diode 10D-05	C21	1-121-180	10 $\pm \frac{100}{10}\%$ 350V electrolytic
D8		diode 10D-4	C22	1-121-426	470 $\pm \frac{100}{10}\%$ 16V electrolytic
D9		diode ZB1-12	C23	1-121-409	47 $\pm \frac{100}{10}\%$ 16V electrolytic
D10		diode CDR-2			
D11		diode CD-2			
D12		diode CDR-4			
D13		diode CD-4			
Q1		transistor 2SC633A	RESISTORS		
Q2		transistor 2SC633A	All resistance values are in $\Omega \pm 5\%$, $\frac{1}{4}W$ and carbon type, unless otherwise indicated.		
Q3		transistor 2SC633A	R1	1-244-711	39K
Q4		transistor 2SC633A	R2	1-244-697	10K
Q5		transistor 2SA564	R3	1-244-697	10K
Q6		transistor 2SC633A	R4	1-244-697	10K
Q7		transistor 2SC633A	R5	1-244-711	39K
Q8		transistor 2SC895	R6	1-244-682	2.4K
Q9		transistor 2SC806A	R7	1-244-697	10K
Th1	8-691-001	Thermistor CS-120	R8	1-244-673	1K
X1	8-750-320	Integrated circuit CX-032	R9	1-244-703	18K
TRANSFORMER			R10	1-244-655	180
T1	1-441-728	transformer, power	R11	1-222-955	47K (B), semi-fixed
CAPACITORS			R12	1-244-706	24K
All capacitance values are in μF except as indicated with P, which means $\mu\mu F$.			R13	1-222-955	47K (B) semi-fixed
C1	1-105-681-12	0.047 $\pm 10\%$ 50V mylar	R14	1-244-721	100K
C2	1-121-409	47 $\pm \frac{100}{10}\%$ 16V electrolytic	R15	1-244-721	100K
C3	1-121-402	33 $\pm \frac{100}{10}\%$ 10V electrolytic	R16	1-244-686	3.6K
C4	1-121-402	33 $\pm \frac{100}{10}\%$ 10V electrolytic	R17	1-244-714	51K
C5	1-121-398	10 $\pm \frac{100}{10}\%$ 25V electrolytic	R18	1-244-686	3.6K
C6	1-121-398	10 $\pm \frac{100}{10}\%$ 25V electrolytic	R19	1-244-686	3.6K
C7	1-105-685-12	0.1 $\pm 10\%$ 50V mylar	R20	1-244-661	330
C8	1-106-057-12	0.22 $\pm 5\%$ 50V mylar	R21	1-244-673	1K
C9	1-105-661-12	0.001 $\pm 10\%$ 50V mylar	R22	1-244-723	120K
C10	1-121-398	10 $\pm \frac{100}{10}\%$ 25V electrolytic	R23	1-244-699	12K
			R24	1-244-704	20K
			R25	1-244-667	560
			R26	1-244-714	51K
			R27	1-244-661	330
			R28	1-244-665	470
			R29	1-244-673	1K

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
R30	1-244-888	4.3K $\pm 5\%$ $\frac{1}{2}W$
R31	1-244-849	100 $\pm 5\%$ $\frac{1}{2}W$
R32	1-205-522	800 Ω 10W wire wound
R33	1-244-682	2.4k Ω
R34	1-244-652	130 Ω
R35	1-244-692	6.2k Ω
R36	1-222-507	5K(B), variable

SWITCHES

S1 } S2 } S3 }	1-514-862	switch, push; 3-gang
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<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
		MISCELLANEOUS
	1-508-462	Plug, 12-P AMPLOK with lead wires
	1-509-421	socket, 3-P
	1-509-422	socket, 6-P
	1-509-435	connector, 2-P AMPLOK with lead wires
NL	1-519-058	lamp, neon
VS	1-526-165-11	voltage changeover block
	1-533-026-31	socket, fuse; 3-P (NEP Model only)
M	8-836-624-10	motor UC-624P